

PATENT

Attorney Docket 020174C-001810US
118C.210USATTENTION: Examiner A. Chakrabarti
FACSIMILE NO.: 703-872-9307

Group Art Unit 1634

CERTIFICATE OF TRANSMISSION UNDER 37 CFR § 1.8

OFFICIAL

I hereby certify that the following documents in re Application of STEPHEN R. QUAKE et al., Serial No. 09/707,737 filed November 6, 2000 for METHODS AND APPARATUS FOR ANALYZING POLYNUCLEOTIDE SEQUENCES are being facsimile transmitted to the United States Patent and Trademark Office on the date shown below.

FAX RECEIVED

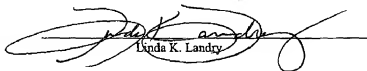
MAR 14 2003

GROUP 1600Document(s) Attached

1. Transmittal Form
2. Fee Transmittal for FY 2002
3. Petition for Extension of Time Under 37 CFR 1.136(a)
4. Request for Continued Examination (RCE) Transmittal
5. Request for Continued Examination Under 35 USC. § 114, Response Under 35 USC § 111

Number of pages being transmitted, including this page: eight (8)

Dated: 13 March 2003


Linda K. Landry

PLEASE CONFIRM RECEIPT OF THIS PAPER
BY RETURN FACSIMILE AT 650-871-7195

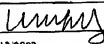
Fluidigm Corporation
7100 Shoreline Court
So. San Francisco, CA, 94080
(650) 266-6036
(650) 871-7195

Please type a plus sign (+) inside this box → ☒

Approved for use through 10/31/2003. OMB 0651-0031
 U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
 Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	09/707,737
	Filing Date	11/06/2000
	First Named Inventor	Quake
	Group An Unit	1634
	Examiner Name	A. Chakrabarti
Total Number of Pages in This Submission	Attorney Docket Number	20174C-001810US

ENCLOSURES (check all that apply)	
<input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Amendment / Reply <input checked="" type="checkbox"/> After Final <input type="checkbox"/> Affidavits/Declaration(s) <input checked="" type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Assignment Papers (for an Application) <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation/Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal notes, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
Remarks _____ REQUEST FOR CONTINUED EXAMINATION INCLUDED	

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	William M. Smith Reg. No. 30,223
Signature	
Date	03/13/2003

CERTIFICATE OF MAILING	
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, Washington, DC 20231 on this date: _____	
Typed or printed name	Date
Signature	

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual user. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Approved for use through 10/31/2002 OMB 0951-0032
 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
 Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

FEE TRANSMITTAL for FY 2002

Patient fees are subject to annual revision.

TOTAL AMOUNT OF PAYMENT (\$) 1,100.00

Complete if Known

Application Number 09/707,737
 Filing Date 11/06/2000
 First Named Inventor Quake
 Examiner Name A. Chakrabarti
 Group Art Unit 1634
 Attorney Doekal No. 20174C-001810US

METHOD OF PAYMENT

1. ☒ The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:
- Deposit Account Number 502508
 Deposit Account Name Fluidigm Corporation
- ☒ Charge any Additional Fee Required under 37 CFR 1.16 and 1.17.
☒ Applicant claims small entity status. See 37 CFR 1.27.
2. ☐ Payment Enclosed:
☐ Check ☐ Credit card ☐ Money Order ☐ Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Small Entity	Fee	Fee	Fee	Fee Description	Fee Paid
Code (S) Code (S)					
101 740 201 370	Utility filing fee				
106 330 206 163	Design filing fee				
107 610 207 265	Plant filing fee				
108 740 208 370	Reissue filing fee				
114 180 214 80	Provisional filing fee				

SUBTOTAL (1) (\$) 0.00

2. EXTRA CLAIM FEES

Total Claims	Extra Claims	Fee from below	Fee Paid
Independent Claims	-20*-	0	0
Multiple Dependent	-0*-	0	0

Large Entity Small Entity	Fee	Fee	Fee	Fee Description
Code (S) Code (S)				
103 18 203 9	Claims in excess of 20			
102 84 202 42	Independent claims in excess of 3			
104 280 204 140	Multiple dependent claim, if not paid			
109 84 209 42	** Reissue independent claims over original patent			
110 18 210 9	** Reissue claims in excess of 20 and over original patent			

SUBTOTAL (2) (\$) 0.00

*or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

Large Entity	Small Entity	Fee Description	Fee Paid
Code (S)	Code (S)		
100 130 205 65	Surcharge - late filing fee or oath		
127 50 227 25	Surcharge - late provisional filing fee or cover sheet		
139 130 139 130	Non-English specification		
147 2,520 147 2,520	For filing a request for ex parte reexamination		
112 920* 112 920*	Requesting publication of SIR prior to Examiner action		
113 1,840* 113 1,840*	Requesting publication of SIR after Examiner action		
416 110 215 55	Extension for reply within first month		
118 400 216 200	Extension for reply within second month		
117 920 217 460	Extension for reply within third month		
118 1,440 218 720	Extension for reply within fourth month		\$725.00
128 1,880 228 880	Extension for reply within fifth month		
119 320 219 160	Notice of Appeal		
120 320 220 160	Filing a brief in support of an appeal		
121 280 221 140	Request for oral hearing		
138 1,510 138 1,510	Petition to institute a public use proceeding		
140 110 240 55	Petition to revive - unavoidable		
141 1,280 241 640	Petition to revive - unintentional		
142 1,280 242 640	Utility issue fee (or reissue)		
143 480 243 240	Design issue fee		
144 820 244 410	Plant issue fee		
122 130 122 130	Petitions to the Commissioner		
123 80 123 80	Processing fee under 37 CFR 1.17(g)		
128 180 128 180	Submission of Information Disclosure Sheet		
581 40 581 40	Recording each patent assignment per property (times number of properties)		
146 740 249 370	Filing a submission after final rejection (37 CFR § 1.126(a))		
148 740 249 370	For each additional invention to be examined (37 CFR § 1.126(b))		
179 740 279 370	Request for Continued Examination (RCE)		\$375.00
169 800 169 800	Request for expedited examination of a design application		
Other fee (specify)			

Reduced by Basic Filing Fee Paid SUBTOTAL (3) (\$) 1,100.00

SUBMITTED BY

Name (Print/Type) William M. Smith

Registration No. 30,226

Telephone 650 266 6030

Signature

Date 03/13/2003

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Approved for use through 10/31/2002. OMB 0001-0031
 U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
 Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION (RCE) TRANSMITTAL

Subsection (b) of 36 U.S.C. § 132, effective on May 29, 2000,
 provides for continued examination of an utility or plant application
 filed on or after June 8, 1998.
 See The American Inventors Protection Act of 1999 (AIPA).

Application Number 09/707,737

Filing Date 11/06/2000

First Named Inventor Quake

Group Art Unit 1634

Examiner Name A. Chakrabarti

Attorney Docket Number 20174C-001810US

This is a Request for Continued Examination (RCE) under 37 C.F.R. § 1.114 of the above-identified application.

NOTE: 37 C.F.R. § 1.114 is effective on May 29, 2000. If the above-identified application was filed prior to May 29, 2000, applicant may wish to consider filing a continued prosecution application (CPA) under 37 C.F.R. § 1.163 (a) (PTO-SB22) instead of a RCE to be eligible for the patent term adjustment provisions of the AIPA. See Changes to Application Examination and Provisional Application Practice, Final Rule, 65 Fed. Reg. 50092 (Aug. 18, 2000); Interim Rule, 65 Fed. Reg. 14865 (Mar. 20, 2000); 1253 Off. Gaz. Pat. Office 47 (Apr. 11, 2000); which establish RCE practice.

1. Submission required under 37 C.F.R. § 1.114

a. ☐ Previously submitted

i. ☐ Consider the amendment(s)/reply under 37 C.F.R. § 1.116 previously filed on _____

ii. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

iii. ☐ Other _____

b. ☒ Enclosed

i. ☒ Amendment/Reply

ii. ☐ Affidavit(s)/Declaration(s)

iii. ☐ Information Disclosure Statement (IDS)

iv. ☐ Other _____

2. Miscellaneous

a. ☐ Suspension of action on the above-identified application is requested under 37 C.F.R. § 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 C.F.R. § 1.170) required)

b. ☐ Other _____

3. ☒ Fees The RCE fee under 37 C.F.R. § 1.17(a) is required by 37 C.F.R. § 1.114 when the RCE is filed.

a. ☒ The Director is hereby authorized to charge the following fees, or credit any overpayments, to

Deposit Account No. 502,508

i. ☒ RCE fee required under 37 C.F.R. § 1.17(a)

ii. ☒ Extension of time fee (37 C.F.R. §§ 1.136 and 1.17)

iii. ☐ Other _____

b. ☐ Check in the amount of \$ _____ enclosed

c. ☐ Payment by credit card (Form PTO-2036 enclosed)

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Name (Print/Type) William M. Smith

Registration No. (Attorney/Agent) 30,223

Signature

Date 03/13/2003

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed for Commissioner For Patents, Box RCE, Washington, DC 20231, or facsimile transmitted to the U.S. Patent and Trademark Office on:

Name (Print/Type)

Signature

Date

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND FEES AND COMPLETED FORMS TO THE FOLLOWING ADDRESS: Assistant Commissioner for Patents, Box RCE, Washington, DC 20231.

PATENT

ATTORNEY DOCKET 020174-00181US
118C.210US
Application Serial No. 09/707,737

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s) Quake, et al.

Art Unit: 1634

Appl. No.: 09/707,737

Examiner: A. CHAKRABARTI

Filed: Nov. 6, 2000

Title:
METHODS AND APPARATUS FOR
ANALYZING POLYNUCLEOTIDE
SEQUENCESREQUEST FOR CONTINUED
EXAMINATION UNDER 35 U.S.C. §114
RESPONSE UNDER 35 U.S.C. §111Assistant Commissioner for Patents
Washington, D.C. 2023

Sir,

In response to the Office Action mailed October 1, 2002, Applicants provide this Request for Continued Examination and Response. Reconsideration of the application mentioned above is respectfully requested.

REQUEST FOR CONTINUED EXAMINATION

Applicants hereby request continued examination of the above-captioned application under 35 U.S.C. §114. A response under 35 U.S.C. §111 is supplied herewith.

RESPONSE

This reply is made in response to an Advisory Action mailed October 1, 2002, such Action being provoked by Applicants timely response filed on September 13, 2002 to a Final Office Action mailed July 3, 2002. Applicants have carefully considered the Examiner's Advisory Action and provide this response. Reconsideration of the present application is respectfully requested.

PATENT

ATTORNEY DOCKET 020174-00181US

118C.210US

Application Serial No. 09/707,737

The Examiner maintains several rejections under 35 U.S.C. §103, stating the claimed invention is not patentable over Livak, *et al.*, (US 5,945,284), in view of Effenhauser, *et al.*, Analytical Chemistry (1997) 69:3451-3457, and in further view of Craighead (US 6,214,246 B1), along with other different references. Applicants respectfully traverse these rejections for the following, additional reasons.

Applicants have addressed the Livak-Effenhauser-Craighead containing combinations in prior responses. In addition to those arguments, Applicants politely point out that the Examiner's reliance upon Craighead to impart in the Examiner's combination the currently recited claim limitation of "multilayer elastomeric" is misguided and improper. Nowhere in Craighead is an elastomeric material disclosed or suggested. Indeed, Craighead teaches away from using an elastomeric material to make its fluidic devices because the pillars of Craighead would collapse if made of elastomeric material due to their high-aspect ratio shape. Craighead only discloses or suggests rigid materials such as glass, quartz, silicon, or plastic materials. Craighead further discloses the reason for using rigid materials by forming an artificial gel within the reaction chamber by providing erect, high-aspect ratio pillars formed from such rigid materials.

Structures . . . have been produced in silicon dioxide, silicon, germanium, polymers, and metals. In one example, pillars were etched 400 nm deep into silicon by Cl₂ reactive ion etch, with the pillar size and separation being approximately 100 nm. The size, shape, and spacing of these pillars, when used as an artificial gel material, affects the DNA motion in the sequencing of DNA fragments. Craighead, Column 10, lines 30-37

Moreover, Craighead emphasizes that the "a substrate carries a plurality of upstanding pillars arranged in linear, or channelized, arrays on, and extending upwardly from, the surface of [the] substrate" (column 10, lines 36-38). The artificial gel is then formed by the interaction between the liquid introduced into the chamber and the erect, high-aspect ratio pillars.

[E]ach of the sample channels . . . contain a highly porous medium for sample separation in electrophoretic analysis. This porous medium functions as an artificial gel for the sample, and is

PATENT

ATTORNEY DOCKET 020174-00181US
118C.210US
Application Serial No. 09/707,737


comprised of parallel pillars, such as the pillars illustrated in Fig. 7, which extend the full depth of the sample channels. Craighead, Column 9, lines 12-18.

Forming the pillars from an elastomeric material would not produce the "upstanding" pillars of Craighead, but rather, bent-over or collapsed pillars. Thus, Craighead, by its need for "upstanding" pillars, impliedly teaches away from using an elastomeric material because using an elastomeric material would defeat the purpose of the pillars and thus render the Craighead device inoperable for the use disclosed by Craighead. It is well settled that a reference cannot be used in a combination that would defeat the purpose of that reference, and/or where such a reference teaches away from making the claimed invention. Accordingly, Applicants respectfully request withdrawal of these rejections because Craighead cannot be reasonably said to teach or suggest using an elastomer.

CONCLUSION

Applicants believe the claim is now in condition for allowance for the foregoing reasons. Accordingly, Applicants respectfully request a Notice of Allowance. If, in the Examiner's opinion, a telephone conference may be helpful, Applicants' counsel may be contacted at the number below.

Very truly yours,


William M. Smith
Reg. No. 30,223Fluidigm Corporation
7100 Shoreline Court
So. San Francisco, CA, 94080
(650) 266-6036
(650) 871-7195